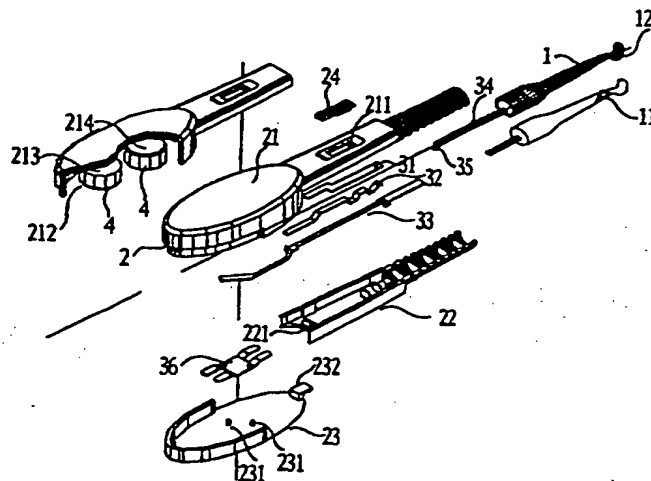




INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 : A61F	A2	(11) International Publication Number: WO 97/33530 (43) International Publication Date: 18 September 1997 (18.09.97)
(21) International Application Number: PCT/KR97/00037 (22) International Filing Date: 11 March 1997 (11.03.97) (30) Priority Data: 1996/4417 U 11 March 1996 (11.03.96) KR (71)(72) Applicant and Inventor: PARK, Seung, Nam [KR/KR]; 97-4, 19/2 Heukseok 3-dong, Tongjak-ku, Seoul 156-073 (KR).		(81) Designated States: AL, AM, AT, AU (Petty patent), AZ, BA, BB, BG, BR (Utility model), BY, CA, CH, CN, CU, CZ (Utility model), DE (Utility model), DK (Utility model), EE, ES, FI, GB, GE, HU (Utility model), IL, IS, JP (Utility model), KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL (Utility model), PT, RO, RU (Utility model), SD, SE, SG, SI, SK (Utility model), TJ, TM, TR, TT, UA, UG, US, UZ, VN, ARIPO patent (GH, KE, LS, MW, SD, SZ, UG), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG). Published Without international search report and to be republished upon receipt of that report.

(54) Title: LIGHTED EAR WAX REMOVER



(57) Abstract

A lighted ear wax remover consists of an elongated pick means, a hand grip member and a wire member. The lighted ear wax remover has a light-emitting device towards the end of an elongated pick means which is made up of transparent material. The light-emitting device, which is connected to two button cell batteries that are set inside the round area of the hand grip member through electric wire, lightens the dark area of the inside of a person's ear canal when operator sees the inside of a person's ear canal to pick a person's ear wax. The hand grip member, which is designed ergonomically, is large enough for operator to take easily and conveniently. The hand grip member accommodates two button cell batteries inside the round type upper area. The other area, which is connected to the elongated pick means directly, has a switch on one side to control the electricity. The wire member transmits electricity from two button cell batteries to light-emitting device in the elongated pick means.

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LIGHTED EAR WAX REMOVER

Technical Field

The invention related to ear wax remover, more particularly to a lighted ear wax remover

5 Background Art

In every day life, the general public, from time to time, pick their ear wax which is stuck inside of ear canal, to hear better, feel cleaner, and above all, keep ear hygienic. People pick their ear wax either with their own hand or with other's help. Being picked with
10 other's help can be considered safer and more convenient than picking alone. However, being picked with other's help has still problems as long as people use conventional ear wax remover such as metal ear pick, bamboo ear pick, and swabs, because of the following drawbacks:

- 15 1) It is inconvenient to use the conventional ear wax remover in the dark ear canal because the targeted object, ear wax, is invisible.
- 2) The use of conventional ear wax remover may accidentally damage ear drum or the skin in the dark ear canal of the cared person, thereby resulting in unnecessary injury.
- 20 3) The shape and size of hand grip of conventional ear wax remover is problematic. The grip is not large enough for people to grasp conveniently, thus causing operator to pick unstably, thereby resulting in unnecessary injury.

Disclosure of invention

- 25 Therefore, a main objective of the present invention is to provide a ear wax remover which does not have the above mentioned drawbacks, when users pick other's ear wax. A lighted ear wax remover includes an elongated pick means, a hand grip member and wire member. According to the present invention, the lighted
30 ear wax remover has a light-emitting device towards the end of a elongated pick means. The light emitting device, which is connected to two

button cell batteries that is set inside of the round area of hand grip member through electric wire, lightens the dark area of the inside of cared person's ear canal when operator sees the inside of cared person's ear canal to pick ear wax of cared person. Shedding light in the dark area is beneficial in many ways. The inconvenience and unsafety can be reduced considerably. In addition, operator can avoid damaging unexpected areas like cared person's ear drum. The hand grip member, which is designed ergonomically, is large enough for operator to take easily and conveniently. The hand grip member accommodates two button cell batteries inside of the round type upper area. The other area, which is connected to the pick means directly as the middle in the whole lighted ear wax remover, has a switch on one side to control the electricity. The wire member transmits electricity from two button cell batteries to light-emitting device in the elongated pick means.

Brief Description of drawings

Other features and advantages of the present invention will become more apparent in the following detailed description of the best mode for carrying out the invention with reference to the accompanying drawings, in which

FIG. 1 illustrates the shape of a lighted ear wax remover of the present invention.

FIG. 2 is a front view of a lighted ear wax remover of the present invention.

FIG. 3 is a rear view of a lighted ear wax remover of the present invention.

FIG. 4 is a plane figure of a lighted ear wax remover of the present invention.

FIG. 5 is a side view of a lighted ear wax remover of the present invention.

FIG. 6 is a backside view of a lighted ear wax remover of the present invention.

FIG. 7 is a exploded view of a lighted ear wax remover of the present invention.

The numbers on the drawings of the best mode for carrying out the

invention have the name or meanings as follows:

1. pick means
11. light emitting device
12. the end of the pick means
- 5 2. hand grip member
21. body case
- 211 switch hole
212. battery case
- 213 plus terminal
- 10 214. minus terminal
22. lower case
221. fixing device of battery cover on the lower case
23. battery cover
231. fixing device of electric terminal plate
- 15 232. fixing device of battery cover
24. switch
3. wire member
31. minus wire
32. switch wire
- 20 33. plus wire
34. minus wire of light emitting device
35. plus wire of light emitting device
36. electric terminal plate
4. battery

25 Best mode for carrying out the invention

Referring to FIG 7, a lighted ear wax remover of present invention is shown to comprise a hand grip member 2, an elongated pick means 1 and electric wire member 3. Referring to FIG 7, the elongated pick means 1 is assembled to the end of the hand grip member 2. The elongated pick means 1 is made up of transparent materials which let light pass without being intervened. The end of the elongated pick means 12 is in the shape of spoon and there is a light-emitting device 11 inside of the elongated pick means 1. The hand grip member 2 can be divided into body case 21, lower case 22 and battery cover 23. The body

body case 21 has two round type battery cases 212 in which two button cell batteries 4 are set to supply electricity to the light-emitting device 11. The body case 21 has a switch hole 211 for the switch 24. The lower case 22 is tightly fastened and fitted to the
5 body case 21. The space is made when lower case 22 and body case 21 are assembled. In the space there is a wire member which is made up of electric conductor such as copper plate, copper wire and synthetic material. The plus terminal 213 of the button cell battery 4 and switch 24 are connected through the switch wire 32.
10 The switch 24 and plus wire of light emitting device 35 which is from light emitting device 11, are connected through the plus wire 33. The minus terminal 214 of button cell battery 4 is connected to the minus wire of light emitting device 34 which is from light emitting device 11, through the minus wire 31. The battery cover
15 23 has an electric terminal plate 36, fixed by fixing device of electric terminal plate 231, by which two button cell batteries 4 are connected in series.

The battery cover 23 can be easily joined and disjoined to the lower case 22 by the fixing device of battery cover 232 and the fixing
20 device of battery cover on the lower case 221. Therefore users can change the button cell batteries 4 after disjoining the battery cover 23 from the lower case 22.

When the switch 24 is turned on, the electric power is supplied to the light-emitting device 11 which send forth light through the
25 elongated pick means 1 made up of transparent material. Therefore users can remove the ear wax conveniently and safely, seeing the inside of cared person's ear canal clearly.

Claims

While a best mode for carrying out the invention has been explained and described, it will be apparent that many changes and modifications can be made in the general construction and arrangement of the present invention without departing from the scope and spirit thereof. Therefore it is desired that the present invention be not limited to the exact disclosure but only to the extent of the appended claims.

1. A lighted ear wax remover comprising a hand grip member which has power suppliers inside, a pick means which has a light-emitting device inside, a wire member which connects batteries to light-emitting device in the pick means,
2. The light-emitting device mentioned in claim 1. is LED, bulb and synthetic device.
3. The pick means mentioned in claim 1. is made up of transparent materials.
4. The transparent material mentioned claim 3. is PC, K-resin and synthetic material.
5. The wire member mentioned claim 1. is copper plate, copper wire and synthetic conductor.

Fig. 1

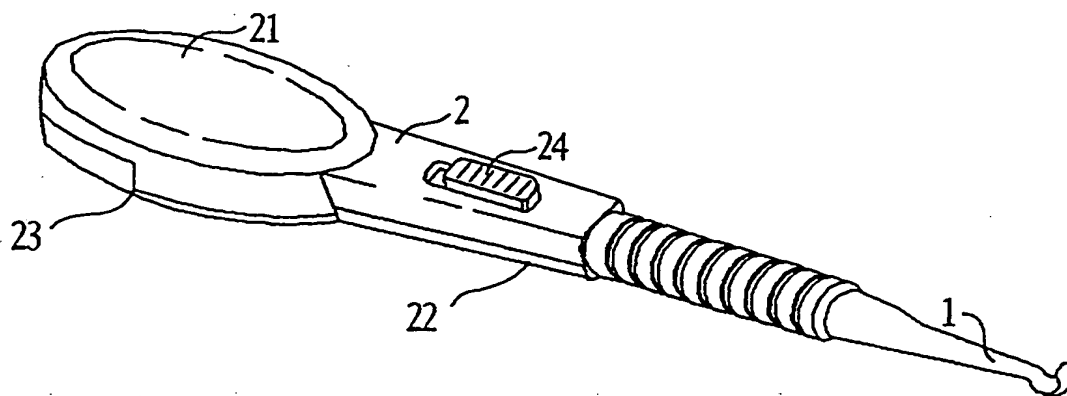


Fig. 2



Fig. 3



Fig. 4

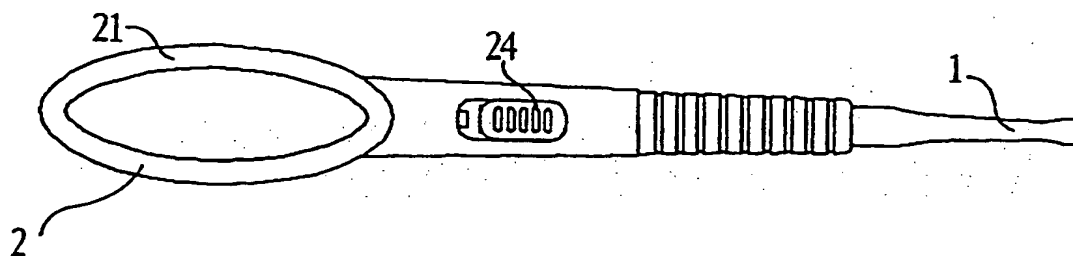


Fig. 5

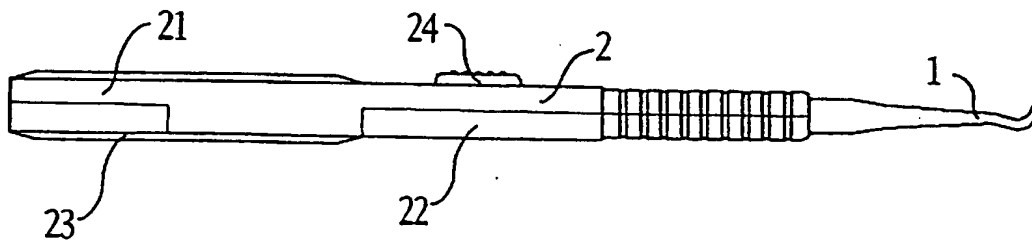
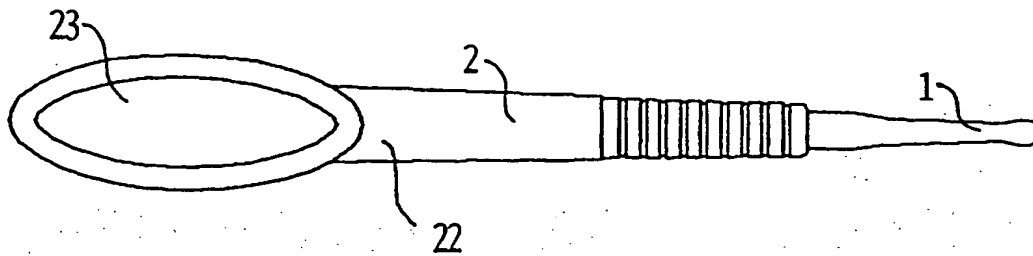
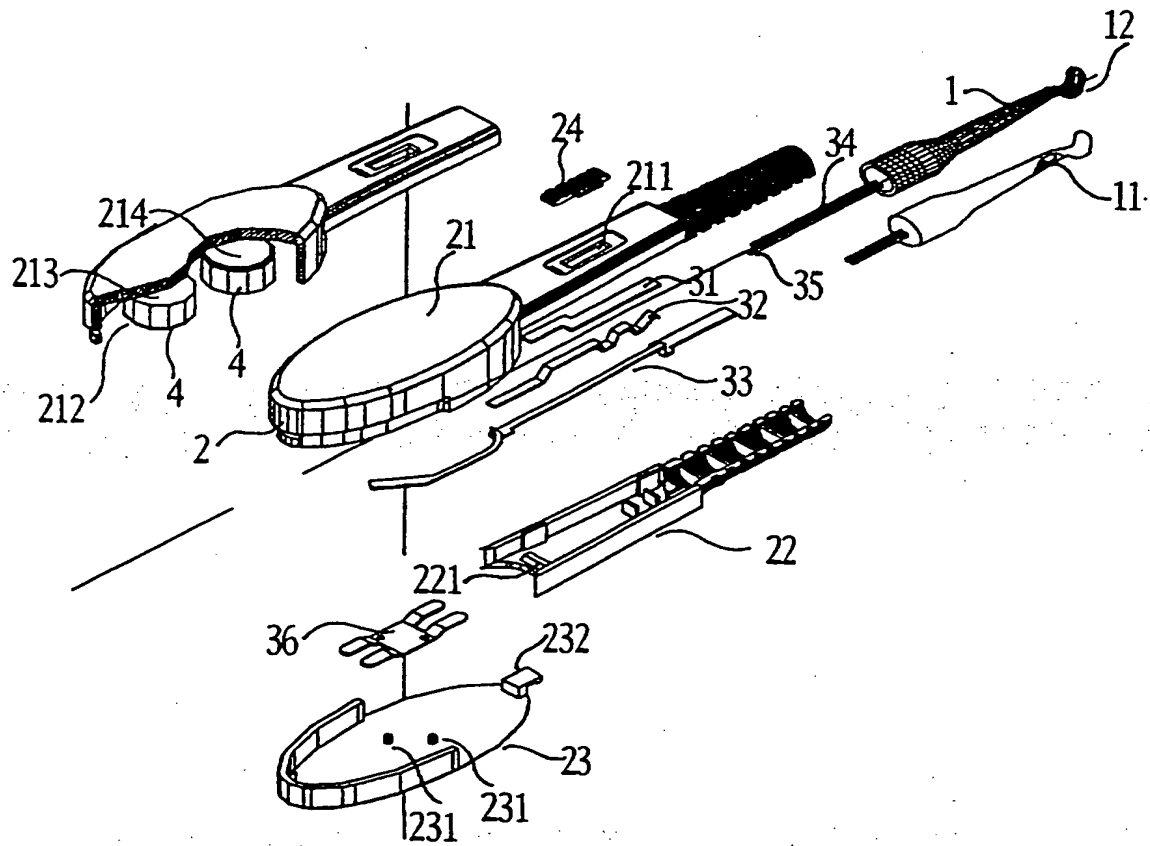


Fig. 6



3/3

Fig. 7





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(51) International Patent Classification 6 : A45D 44/00; A61B 17/22, 1/227; A61F 11/00; F21V 33/00	A3	(11) International Publication Number: WO 97/33530 (43) International Publication Date: 18 September 1997 (18.09.97)
(21) International Application Number: PCT/KR97/00037 (22) International Filing Date: 11 March 1997 (11.03.97) (30) Priority Data: 1996/4417 U 11 March 1996 (11.03.96) KR (71)(72) Applicant and Inventor: PARK, Seung, Nam [KR/KR]; 97-4, 19/2 Heukseok 3-dong, Tongjak-ku, Seoul 156-073 (KR).		(81) Designated States: AL, AM, AT, AU (Patent), AZ, BA, BB, BG, BR (Utility model), BY, CA, CH, CN, CU, CZ (Utility model), DE (Utility model), DK (Utility model), EE, ES, FI, GB, GE, HU (Utility model), IL, IS, JP (Utility model), KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL (Utility model), PT, RO, RU (Utility model), SD, SE, SG, SI, SK (Utility model), TJ, TM, TR, TT, UA, UG, US, UZ, VN, ARIPO patent (GH, KE, LS, MW, SD, SZ, UG), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i> (88) Date of publication of the international search report: 18 December 1997 (18.12.97)
(54) Title: LIGHTED EAR WAX REMOVER <div data-bbox="519 1134 1169 1638" data-label="Image"> </div> (57) Abstract <p>A lighted ear wax remover consists of an elongated pick means (1), a hand grip member (2) and a wire member (3). The lighted ear wax remover has a light-emitting device (11) towards the end of an elongated pick means (12) which is made up of transparent material. The light-emitting device (11), which is connected to two button cell batteries (4) that are set inside of the round area of hand grip member (2) through electric wire, lightens the dark area of the inside of cared person's ear canal when operator sees the inside of cared person's ear canal. The hand grip member (2), which is designed ergonomically, is large enough for operator to take easily and conveniently. The hand grip member (2) accommodates two button cell batteries (4) inside of the round type upper area. The other area, which is connected to the elongated pick means (1) directly, has a switch (24) on one side to control the electricity. The wire member transmits electricity from two button cell batteries (4) to light-emitting device (11) in the elongated pick means (1).</p>		

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR 97/00037

A. CLASSIFICATION OF SUBJECT MATTER

IPC⁶: A 45 D 44/00; A 61 B 17/22, 1/227; A 61 F 11/00; F 21 V 33/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC⁶: A 45 D; A 61 B; A 61 F; F 21 V

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

WPIL, EPODOC, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 785 796 A (MATTSON P.D.) 22 November 1988 (22.11.88), totality.	1-5
A	US 4 572 180 A (DEENADAYALU R.P.) 25 February 1986 (25.02.86), totality.	1-5
A	US 5 133 721 A (NASA US.NAT. AERO & SPACE ADMIN.) 28 July 1992 (28.07.92), totality.	1

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:

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"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

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Date of the actual completion of the international search

27 October 1997 (27.10.97)

Date of mailing of the international search report

04 November 1997 (04.11.97)

Name and mailing address of the ISA/AT

AUSTRIAN PATENT OFFICE

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Facsimile No. 1/53424/535

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Form PCT/ISA/210 (second sheet) (July 1992)

The first cited document (US 4 785 796 A) describes an otoscope which includes a lens for viewing the ear canal. A curette is fabricated from a flexible material which is also translucent to transmit light from a light source in the otoscope into the ear canal. An optical path is defined from the light source to illuminate tissues in the cavity. The light path and view path converge so that a direct, illuminated view is provided to the examiner.

The second cited document (US 4 572 180 A) describes a lighted curette is for use in removing an undesirable substance from either an ear canal or a nasal passage. The lighted curette comprises a light to which is attached a handle from which extends a stem. The stem has an engagement member adjacent its end for engaging and removing an undesirable substance from a nasal passage or an ear canal. Light rays are emitted from the light and illuminate the engagement member. A magnification lens is attached to the light for use in observing and removing the undesirable substance.

The device of the third cited document (US 5 133 721 A) is a foreign object remover for ear, nose or throat which comprises (a) housing; (b) electrical power source; (c) tip extending from the housing; and (d) light bulb located on the housing, to illuminate the tip. The tip comprises wire loop(s) of shape memory alloy, switchably connected to the electrical power source, so that when electric current flows through the wire loop, the loop treats up and returns to a previously programmed shape, to facilitate removal of foreign objects.

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT/KR 97/00037

In Recherchenbericht angeführtes Patentdokument Patent document cited in search report Document de brevet cité dans le rapport de recherche		Datum der Veröffentlichung Publication date Date de publication		Mitglied(er) der Patentfamilie Patent family member(s) Membre(s) de la famille de brevets		Datum der Veröffentlichung Publication date Date de publication	
US A	4785796	22-11-88		keine - none - rien			
US A	4572180	25-02-86		keine - none - rien			
US A	5133721	28-07-92		keine - none - rien			